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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,169	05/10/2007	Xavier Couillens	1022702-000323	5100
21839 7590 12/18/2009 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER				
KOLLAS, ALEXANDER C				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
12/18/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/583,169

Applicant(s)

COUILLENS ET AL.

Examiner

ALEXANDER C. KOLLIAS

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15 and 20-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15 and 20-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/13/2009 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15, 20-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 15 recites that the fire-retardant system comprising compounds F1, F2, and F3 comprises 1 to 50 wt % of the composition. Further, claim 15 recites that F1 comprises 5 wt % to 15 wt %, F2 comprises 2 wt % to 10 wt %, and F3 comprises 1 wt % to 10 wt % with respect to the total weight of the composition. The recited upper bound amounts F1, F2, and F3 tiled a total amount of 45 wt % of the composition, which renders the scope of the claim confusing given that the claims require that F1-F3 comprise an upper bound amount of 50 wt % of the composition while the total amount of F1-F3 is 45 wt %.

5. Claim 29 recites the limitation "the flame-retardant agents or agents which are synergistic with the flame retardant system" Lines 2-3. There is insufficient antecedent basis for this limitation in the claim. It appears that claims 29 which recited compounds which are synergistic with the flame-retardants out to depend from claim 29 which recites that the system further comprises flame-retardant agents or agents which are synergistic with the flame-retardant system.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 15, 20-26, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlosser et al (US 6,255,371) in view of Yakabe et al (US 2002/0151625).

Regarding claims 15, 21-22, and 32, Schlosser et al teaches a fire-retardant composition comprising a polyamides and copolyamides such as nylon-6, nylon-4, and nylon-6,6 or polyester such as PBT or PET (Column 5, Lines 47-64 and Column 6, Lines 1-8). Regarding the fire-retardants, the reference discloses phosphinates given by Formula (I) which is identical to Formula (I) (disclosed a component A) recited in claim 1 as F1 (Abstract, Column 1, Lines 50-59). The reference discloses that R^1 and R^2 of disclosed Formula (I) are C_1-C_6 alkyl and can be the same or different (Column 1, Lines 65-67). The reference discloses that the phosphinate salt is added to the composition in the amount from 3 to 20 wt % (Column 3 Lines 22-25). Furthermore, it is noted that the amount disclosed by the reference is within the recited amount from 1 to 15 wt % of F1 recited in claim 15 (Column 3, Lines 22-25).

The reference discloses that the composition comprises a second fire retardant such as condensation products of melamine and/or reaction products of melamine with phosphoric acid such as melamine polyphosphate and melem polyphosphate (compound F2) (disclosed as component B Column 2, Lines 7-12 and Column 2 Lines 57-60). The disclosed melamine and melem polyphosphate compound disclosed by the reference clearly encompass the compounds recited in claim 21. It is noted that disclosed component B can be either melamine reaction products or melamine phosphate or a combination of the two. It is noted that disclosed

compound B can be a mixture of melamine reaction products and melamine phosphate which clearly encompasses compounds F2 and F3 recited in the instant claims. Furthermore, the reference discloses that component B comprises 3 to 20 wt % (Column 3 Lines 22-25).

It is noted that components A and B comprise 6 to 40 wt %, clearly meeting the claim limitation recited in claims 15 and 32 that the composition comprises at least 13 wt % and 15 wt % of F1 and F2. Furthermore, as the reference discloses that components A (F1) and B (a mixture of F2 and F3) may independently comprise 3 to 20 wt % of the composition, the total amount of components A and B (and therefore compounds F1-F3) is 6 to 40 wt %, meeting the claim limitation that F1-F3 comprises 1 to 50 wt % of the composition.

Schlosser teaches all the claim limitations as set forth above. While the reference discloses the use of mixtures of condensation products of melamine and reaction products of melamine with phosphoric acid, the reference does not disclose amounts of melamine reaction products.

Yakabe et al discloses fire retardants for polyamides comprising melamine polyphosphates utilized in an amount from 10 to 38 wt % of the composition (Abstract, Page 2 [0011], Page 3 [0025]-[0026]). The reference discloses that these compounds offer very high flame-retardation effects when utilized in combination with inorganic reinforcing materials such as glass as well as heat resistance (Page 3 [0026], [0029]). Further it is noted that based on the amount of the compounds F1 (3 to 20 wt %) and F3 (3 to 20 wt %) disclosed by Schlosser and the amounts of melamine polyphosphate (F2) disclosed by Yakabe et al (10 to 38 wt %), the total amount of F1-F3 is determined to be 3 to 78 wt % of the composition, which overlap the amount of 1 to 50 wt % of F1-F3 recited in claim 15. It is noted that the polyphosphate

compounds disclosed by the reference meets the limitations in claim 21 drawn to compounds such as melamine polyphosphate.

Given that Schlosser et al discloses a composition comprising polymers, phosphinate salts, melamine condensation products and reaction products of melamine and phosphoric acid, as well as inorganic fillers and given that the reference does not explicitly prohibit other ingredients, in light of the particular advantages provided by the use and control of the melamine polyphosphate as taught by Yakabe et al, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Schlosser et al with a reasonable expectation of success.

Regarding claim 20, the combined disclosures of Schlosser and Yakabe et al teach all the claim limitations as set forth above. Although Schlosser does not explicitly disclose the phosphinic acid compounds recited in claim 20, disclosed Formula (I) comprising groups R1 and R2 which may be identical or different and are C₁₋₆ alkyl clearly encompasses the recited compounds in the present claim.

Regarding claims 23-25, the combined disclosures of Schlosser and Yakabe et al teach all the claim limitations as set forth above. As discussed above, Schlosser discloses a composition where polymer is a polyamides or copolyamide such as nylon-6, nylon-4, and nylon-6,6 or polyester such as PBT or PET meeting the limitations recited (Column 5, Lines 47-64 and column 6, Lines 1-8).

Regarding claims 26 and 31, the combined disclosures of Schlosser and Yakabe et al teach all the claim limitations as set forth above. Additionally, Schlosser discloses that the

composition comprises fillers such as glass fibers as well as articles of manufacture such as moldings, films, filaments and fibers, meeting the claim limitations recited in claim 26.

Regarding claim 30, the combined disclosures of Schlosser and Yakabe et al teach all the claim limitations as set forth above. Additionally, Schlosser discloses a process of blending the thermoplastic polymers with the flamed retardant system (Column 7, Lines 5-19).

10. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlosser et al (US 6,255,371) and Yakabe et al (US 2002/0151625)) as applied to claims 15, 20-26, and 28-32 above, and in view of Lewis (see attached pages of *Hawley's Condensed Chemical Dictionary*) and Pitts et al (US 3,865,760).

Regarding claims 28-29, the combined disclosures of Schlosser et al and Yakabe teach all the claim limitations as set forth above. Additionally, Schlosser discloses that the compositions may comprise compounds such as chalk (Column 7, Lines 13-19). As evidenced by Lewis chalk is commonly known in the art as calcium carbonate which meets the limitations drawn to alkaline earth metal carbonate recited in the claim 29. While the references do not disclose that calcium carbonate is a flame retardant synergist, it is the Examiner's position that calcium carbonate will inherently function as a synergist. Evidence to support the Examiner's position is found in Col. 1, Lines of 57-61 of Pitts which discloses that calcium carbonate is a flame retardant. Thus, given that the Schlosser discloses a compositions comprising the flame retardants discussed above and given the evidence in Pitts, it is clear that chalk as disclosed in Schlosser will function as a flame retardant synergist as presently claimed.

11. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlosser et al (US 6,255,371) and Yakabe et al (US 2002/0151625)) as applied to claims 15, 20-26, and 28-32 above, and in view of Hanabusa et al (US 6,433,045).

The discussion with respect to Schlosser and Yakabe et al as set forth in Paragraph 9 above is incorporated here by reference

Regarding claim 27, the combined disclosures of Schlosser and Yakabe et al teach all the claim limitations as set forth above. Additionally, Schlosser teaches that minerals such as chalk may be added to the fire retardant molding composition (Column 7, Lines 20-23). However, the reference does not teach a composition, wherein the reinforcing fillers are wollastonite, kaolin, clay, silica and mica.

Hanabusa et al teaches a fire retardant composition comprising inorganic fillers are wollastonite, kaolin, clay, silica and mica (Column 5, Lines 40-49). Furthermore, the reference teaches that inorganic fillers can be used either singly or in combination of two or more of them. The fibrous filler, particularly the combination of a glass fiber with a powdery and/or platy filler (such as mica, See Column 5, Lines 48-49), is desirable for obtaining excellent mechanical strength.

Given that both Schlosser et al and Hanabusa et al are drawn to flame retardant thermoplastic compositions comprising phosphoric acid salts (Formula F1 of instant application), melamine compounds, and inorganic fillers and fibers, and, given that Schlosser et al does not explicitly prohibit other ingredients, in light of the particular advantages provided by the use and

control of the amount of inorganic fillers as taught by Hanabusa et al, it would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to include such inorganic fillers in the flame retardant thermoplastic composition as taught by Schlosser with a reasonable expectation of success.

Response to Arguments

12. Applicant's arguments filed 10/13/2009 have been fully considered but they are not persuasive. Applicant's arguments with respect to claim 15 and 20-32 have been considered but are moot in view of the new ground(s) of rejection. The deficiencies with respect to the applied prior art of record, Schlosser in view of Flippo have been remedied by Schlosser in view of Yakabe et al in the rejections set forth above.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796